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31 October 2012

Online at <https://mpra.ub.uni-muenchen.de/42500/>
MPRA Paper No. 42500, posted 07 Nov 2012 15:49 UTC

Interest Based Financial Intermediation: Analysis & Solutions

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Abstract

Interest is prohibited in all monotheist religions. Apart from religion, interest is also regarded as unjust price of money capital by pioneer secular philosophers as well as some renowned economists. However, it is argued by some economists that modern day, market driven interest rate in a competitive financial market is different from usury and that the interest based financial intermediation has served a useful purpose in allocation of resources as well as in allocation of risk, given the interpersonal differences in risk preferences that exist in any society. Hence, there is a need to delineate clearly whether Islamic economics distinguishes between usury and interest. Secondly, there is also a need to reassess the economic merits and demerits of modern day competitive financial markets fueled by interest based financial intermediation. This paper tries to serve this need and presents a brief review of literature on the issue and examines the economic rationale usually presented for legitimizing interest as the price of capital. The paper analyzes the impact of interest based financial intermediation on macroeconomic variables as well as on development goals by highlighting few glaring facts and statistics and empirical evidence documented in past studies. The paper concludes with delineating the role of capital in an Islamic economy and how it can be valued in an Islamic economy without compensating it with fixed payoffs and the paper also assesses how economic and financial decisions will be altered in this new interest-free framework.

Keywords Interest, Usury, Islamic Finance, Islamic Banking, Financial Intermediation, Economic Justice

JEL Codes E42, E52, E60

1. Introduction

Besides Islam, interest is also prohibited in all monotheist religions (See Exodus 22:25, Leviticus 25:35-36, Deuteronomy 23:20, Psalms 15:5, Proverbs 28:8, Nehemiah 5:7 and Ezakhiel 18:8,13,17 & 22:12). Even in secular literature, one finds criticism on interest. Aristotle (384-322 BC) in

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his book "Politics" criticized interest in following words *"Of all modes of getting wealth, this is the most unnatural"*.

Thomas Aquinas in "Summa Theologica" writes:

"To take usury for money lent is unjust in itself, because this is to sell what does not exist, and this evidently leads to inequality which is contrary to justice".

He further explains that money was invented chiefly for the purpose of exchange and consequently the proper and principal use of money is its consumption or alienation whereby it is sunk in exchange. Hence, it is by its very nature unlawful to take payment for the use of money lent.

He reasons that:

"Just as man is bound to restore ill-gotten goods, so is he bound to restore the money which he has taken in usury".

In modern economics too, we find criticism on interest. Keynes (1936, p. 377) in his treatise "General Theory of Income, Employment, Interest and Money" stated:

"Interest to-day rewards no genuine sacrifice, any more than does the rent of land. The owner of capital can obtain interest because capital is scarce, just as the owner of land can obtain rent because land is scarce. But whilst there may be intrinsic reasons for the scarcity of land, there are no intrinsic reasons for the scarcity of capital. An intrinsic reason for such scarcity, in the sense of a genuine sacrifice which could only be called forth by the offer of a reward in the shape of interest, would not exist, in the long run, except in the event of the individual propensity to consume proving to be of such a character that net saving in conditions of full employment comes to an end before capital has become sufficiently abundant. But even so, it will still be possible for communal saving through the agency of the State to be maintained at a level which will allow the growth of capital up to the point where it ceases to be scarce."

In one of his famous essay, Keynes (1932, p.358) argues:

"When the accumulation of wealth is no longer of high social importance, there will be great changes in the code of morals. We shall be able to rid ourselves of many of the pseudo-moral

principles which have hag-ridden us for two hundred years, by which we have exalted some of the most distasteful of human qualities into the position of the highest virtues ...

But beware! The time for all this is not yet. For at least another hundred years we must pretend to ourselves and to everyone that fair is foul and foul is fair; for foul is useful and fair is not. Avarice and usury and precaution must be our gods for a little longer still. For only they can lead us out of the tunnel of economic necessity into daylight."

2. Definition of Capital in Islamic Economics

It will be worthwhile to discuss the difference between physical capital stock and financial and money capital. Physical capital stock includes human-made goods or produced means of production. In classical economics literature, capital takes different forms. A firm's assets are known as its capital, which may include fixed capital (machinery, buildings, and so on) and working capital (stocks of raw materials and part-finished products, as well as money). Financial capital includes money, bonds and shares.

In classical economics, investment which increases the capital stock is also priced the same way as physical capital stock. Hence, classical economics considers rent on machine and interest on money as one and the same thing and the classical economics only attributes 'interest' as compensation to all different classifications of capital generally.

Money itself has no intrinsic value and is neither a rentable asset nor a tradable commodity as per Islamic principles. If capital is combined with labor, it "could" produce profit, but if money alone is lent, the interest it earns is not permissible. Interest is neither a justifiable reward of money nor capital. Money holder/owner has to convert it in one of the factors of production namely 1) land with natural resource, 2) physical capital stock and/or 3) become an investing entrepreneur to have any justifiable compensation from the production process.

Now, we discuss the issue of correct meaning of riba and whether it includes usury only or modern day interest too. In modern times, few scholars argued that there is a difference between interest and usury. Usury refers to the exorbitant rate of interest charged on consumption loans in olden times. Quranic reference to 'Riba' is condemnation of this 'Usury' that existed in those times. They further argue that the 'interest rate' is competitively set price of use of financial capital determined in the market with the consent of buyers and sellers and is different from usury.

However, the issue was clarified by the council of Islamic ideology's report in 1980 and later; a historic judgment on interest was issued by the supreme court of Pakistan (Usmani, 2007). The council's report stated:

"The term riba encompasses interest in all its manifestations irrespective of whether it relates to loans for consumption purposes or for productive purposes, whether the loans are of a personal nature or of a commercial type, whether the borrower is a government, a private individual or a concern, and whether the rate of interest is low or high" (Council's Report, 1980, p.1).

3. Critique of Interest Based Financial Architecture

3.1. Critical Analysis of Economic Rationale for Interest

Clary (2011) mentions that Scholastics recognized two cases that give title to legitimate interest. The first, *cessant gain*, represented the failure of the lender to receive what he would have gotten, had he not made the loan. The second, *emergent loss*, represented the direct costs to the lender when making the loan. Clary (2011) argues that in fractional reserve banking, banks create credit money out of thin air and hence, they incur no direct cost as such. Briefly, we discuss these two and other reasons and their economic and legal rationale.

3.1.1. Is interest the price of risk?

It is not right to say that lending money involves a risk. Because the lender gets interest in any condition, whereas businesses after taking risk either earn profit or incur a loss. The relevant risk that differentiates entrepreneurship and money lending is the risk of owning and possessing a risky tradable asset and taking the risk related to the asset, including price risk and sale risk.

3.1.2. Is interest the price of self-forgone needs?

A lender lends a portion of his money that he doesn't need immediately. So, he is not forgoing his needs as his needs are already fulfilled. He is only lending the money that is in excess of his needs.

The argument of opportunity cost is interesting and merits an explanation. If I have a job paying me \$1,000 per month and I decide to leave it and complete my PhD. Then, the opportunity cost of going to do PhD is \$1,000 of job income forgone for me. When I am considering the option of doing

PhD, I must also bear in mind this opportunity cost along with fees and cost of books (out of pocket costs).

Opportunity cost of an activity is the cost of best alternative forgone in its place. If, for example, I had another job option paying \$500 per month, then, the opportunity cost of doing PhD will remain to be \$1,000. It is because by not doing PhD, I would have taken one of the two jobs and I will have taken the one that pays me \$1,000 over the one that pays \$500. Then, the opportunity cost of doing PhD is \$1,000 of job (best alternative of the two jobs) income forgone plus the out of pocket costs.

Just like I cannot ask or force the university to pay me \$1,000 each month for me to do PhD, similarly, the owner of capital cannot ask or force the borrower to pay him/her any stipulated increase over the principal amount in a loan transaction.

Dempsey (1951, p. 37-38) comments on this argument as follows:

"This is analogous to saying that a workman should be paid for staying away from work because if he does not work, he does not get paid, and therefore, by staying home, he suffers a loss for which he deserves compensation."

3.1.3. Is interest the share in the profits of the borrower?

Interest is not a share in the profit of the borrower because if money is borrowed for fulfilling needs rather than for conducting business, then, there is no question of a profit. But, even if money is lent for commercial purposes, then, how can we say that the business will be profitable. Businesses earn profit and incur losses, but why the investor doesn't share in the loss and what sort of an effort he has put in to demand a profit that is fixed and confirmed irrespective of the profitability of the business of the borrower.

3.1.4. Is interest a rent on money?

Those things on which rent is charged are used and returned back in the same existing condition like homes, cars etc. While money and other consumption goods are necessarily consumed during their use. When we borrow money, we consume it and regenerate it to repay the borrowed sum. When the money is consumed, the borrower has to regenerate it and the lender without taking any risk is entitled to receive the consumed money with the interest. Can we borrow apples or mangoes on rent? We can borrow hammer but not the nails based on the above classification.

Watt (1945) explains this concept by giving an example. He argues that when a piece of bread is sold, the right of use is included in the sale. According to him, any baker would be extortionist who charged a customer a price to buy the bread and who then charged the customer for the right to eat it.

3.2. Problems in Circular Flow Model With Interest

As per Islamic principles, within certain bounds, the market forces can operate and will determine which goods should be produced and offered at what price. Through private sector investment and production, resource markets and product markets will function to enable households to obtain purchasing power by providing factors of production like labor or land in the production process and earn compensation in terms of wage and rent, respectively.

The difference from capitalistic system is that rather than having a fixed compensation, the capital will only earn share in actual profit/loss out of the production process in which it is used. Hence, the capital has to be used in some production process to earn its reward out of actual net payoffs arising from a production process. This will have positive effects on distribution of income as well as wealth.

With no fixed compensation to capital and together with a tax on idle capital, the capital would be directed towards production activities enabling the households to get more employment opportunities rather than to rely on subsidies/poverty reduction grants etc.

Redistribution of resources will be always progressive in nature i.e. wealth will flow from rich to the poor. Moreover, any capitalist would only earn profits in a competitive economy after taking part in the production process rather than just loaning out money and earn interest on it.

Competitive nature of the economy which is not more than an assumption in a capitalistic system would be present and ensured through banning fixed return on capital, introducing direct tax on idle capital, having only lenient tax on productive income and reduced average cost of capital by disallowing fixed rate of interest on it.

With an opportunity to share in profits, households will have an added benefit to not only gain purchasing power through provision of labor and land, but also through provision of capital and they can share in actual

profits rather than earn just a fixed rate of interest which is negative in real terms in most developing countries.

Since capital will not have fixed interest as compensation, the compensation to each factor would be linked with payoffs from the production process. Hence, the policy making will only have to look at boosting production.

Capital use in productive activities would increase rather than remaining idle and out of production process. Unlike in a capitalistic system, capital will not add a burden factor of 'interest' on the production process. It will get compensation from the actual profits earned rather than adding to the cost of productive activities.

Through the above features, efficiency as well as equity can both be adequately addressed and obtained without having to rely on force, exorbitant taxes, and unnecessary government intervention or to rely on unorthodox policies.

3.3. Distributional Inequity in Interest Based Finance

Capitalism, the way it is practiced as an economic system, has largely allowed and provided legal cover to certain exploitative institutions and their operations based on free market philosophy. Such institutions have been chiefly responsible for much of the distributional inequity in the world today.

Interest based financial system has resulted in increased concentration of wealth in the world. To put the matters in right perspective, income inequality even in OECD (Organization for Economic Cooperation & Development) countries is at its highest level for the past half century. The average income of the richest 10% of the population is about nine times that of the poorest 10% across the OECD, up from seven times 25 years ago. OECD countries represent developed world with sophisticated financial markets.

High income inequality in OECD countries shows that more sophisticated the interest based financial system, more disturbed the income distribution will be and as various reports suggest, the high economic growth even in long term does not and has not improved income distribution and rather it has worsened income distribution. Past growth experience of Japan and USA or even recent growth experience of India and China has resulted in increased income inequality in these countries. Growth not only has failed to improve income distribution, but when it is obtained in presence of interest based financial system, the income distribution has worsened as the empirical evidence shows for these countries.

Indeed, even in free market philosophy, we do not allow certain institutions which bring harm to the society and individual liberty. But, so far, we have turned limited attention towards critically evaluating the ever more intricate system of interest based financial intermediation in practice today and its negative externalities including pecuniary and otherwise.

Having perfect markets leads to efficiency and economic welfare, but the institution of interest hampers potential investment by arbitrarily making capital scarce. It encourages concentration of wealth and creates a barrier in the way of use of funds in productive enterprise. Positive economics says that given an interest based investment opportunity; consider productive enterprise only if rate of return exceeds the market interest rate, but positive economics does not consider negative externalities, e.g. increased income inequality, poverty and below full employment use of real scarce resources resulting by artificially making capital scarce.

No matter whatever is the initial distribution of wealth in society, interest based financial intermediation brings concentration of wealth eventually in every society by granting private right of fiat money creation to central bank and allowing fractional reserve system which gives right to private banks to create credit money.

The disincentive to enter in entrepreneurial pursuits because of lack of willingness of capitalists to risk capital while having the opportunity to earn fixed interest income brings down investment in the economy. Decline in the potential investment in productive pursuits reduces real sector economic growth, keeps unemployment high and it adds burden on fiscal position of government to expend on transfer payments. Then, if more money is printed, it increases indebtedness and which can eventually result in a country paying major portion of its gross national income every year in the form of interest, which is the price of intrinsically valueless fiat money in a loan transaction.

Furthermore, in terms of economic organization, interest based system also decreases competitiveness in the markets, resulting potentially in the loss of welfare, allocative and productive efficiency and by creating other ills associated with market imperfections.

Chapra (2007) mentions another aspect that in an interest based relationship, the lender may tend to take risks which are not worthwhile if the arrangement was based on risk sharing basis. The fixed contractual compensation encourages less prudence, carelessness, unsound risk analysis and hence may contribute to losses and macroeconomic imbalances and

crisis. Indeed, the frequency of the crises in recent past has increased alongside more sophisticated and complicated interest based financial architecture.

3.4. Negative Effects of Interest Based Loans on Development

Most developing countries are going through a perpetual debt trap which takes away resources that could have been used on development, but instead are used to service compounded debt.

Continent of Africa seems to be most affected by the debt crisis. Africa's debt stock in 1970 was \$11 billion and Africa's debt stock in 2008 stood at \$215 billion. Furthermore, Sub Saharan Africa receives \$10 billion in aid but loses \$14 billion in debt payments per year (Africa Action, 2008).

Currently, Africa's total external debt stands at \$300 billion. Many African countries spend more on debt than either on health or education. For example, Cameroon, Ethiopia, Gambia, Guinea, Madagascar, Malawi, Mauritania, Senegal, Uganda and Zambia all spent more on debt than on health in 2002. GNP per capita in Sub-Saharan Africa is \$308 while external debt per capita stands at \$365. Just to cite one example, Nigeria borrowed around \$5 billion and has paid about \$16 billion, but still owes \$28 billion. Regrettably, 7 million children die each year as a result of the debt crisis.

Ajayi & Oke (2012) found in an empirical study for Nigeria that external debt burden had an adverse effect on the per capita income and led to devaluation of the currency, increase in unemployment, social strife and poor educational system.

Easterly (2002) presented the similar empirical evidence which shows a negative effect of indebtedness on growth. Explaining the evidence, he stated that the paradox of debt is that heavily indebted poor countries (HIPCs) became more heavily indebted after two decades of debt relief efforts. He stated that even concessional financing, a form of debt relief also failed to reduce net present value of debt. According to him, the record is not encouraging for the success of current debt relief efforts.

Cunningham (1993) collecting evidence for the period 1971-1987 from 16 HIPCs found a significant negative relationship between the growth of debt burden and economic growth in these countries.

It is not just Africa that is suffering from the debt crisis. Other developing regions are also having the same negative impacts. Malik et al. (2010) provided the empirical evidence for Pakistan's economy which shows

negative and significant relationship of external debt with economic growth. Currently, Pakistan pays around Rs 1,000 billion in debt servicing. Most of the debt is of the nature of deadweight debt. About half of the tax revenue goes to the lenders in paying of interest.

4. Outline of a Financial Architecture Sans Interest

4.1. Time Value of Money & Islamic Standpoint

In investment for trade (which Islam allows), the investment goes through the entire process of a commercial activity that involves risk taking at each stage and any compensation on investment is strictly dependent upon the outcome of the commercial activity. The profit for the businessperson strictly depends upon the actual profit realized after taking market risk including price risk. It does not depend upon time.

Time value of money is the basis of interest. Time value of money is the problem for the investor to avoid keeping his/her money idle and to avoid forgoing the use of money that may bring positive value to his/her investment. However, it does not mean that the investor can demand an arbitrary increase (or is given as the case may be) as the cost of using money without taking the market and price risk.

4.2. Equity Over Debt Financing: The Islamic Perspective

Increase in financial instruments through issuance in primary market does not add to 'Gross Fixed Capital Formation' unless they are used in a way which increases the productive capacity of the economy. Islamic principles compliment the growth in 'Gross Fixed Capital Formation' or productive capacity of the economy by encouraging entrepreneurship in productive sector. Taking on entrepreneurial risk is at the heart of Islamic economics. This risk can only be eliminated at the cost of compromising the basic distinctions of Islamic economic principles. Effective institutions are required to perform financial intermediation that promote entrepreneurial culture rather than circumvent it.

Debt financing is a double-edge sword. Leveraged companies can magnify their returns in booms, but in slumps, they lose the edge and can even go bankrupt and make both their shareholders and creditors suffer.

A simplified economic model will highlight the point that equity financing is less risky and better able to give profitable results in boom and in recession. In view of EMH (Efficient Market Hypothesis), profitability would be reflected in market prices.

Table 1: Financial Statements of Non-Leverage Company

Non-Leverage Company			
Assets	Rs. (in millions)	L + O.E	Rs. (in millions)
F.A	60	Debt	0
C.A	40	Equity	100
<i>Total Assets</i>	100	<i>Total L + O.E</i>	100

Case 1: Economic Boom Income Statement (Non-Leverage Company)		Case 2: Economic Recession Income Statement (Non-Leverage Company)	
	Rs in mln		Rs in mln
Net Sales	100	Net Sales	60
CoGS (70% of sales)	70	CoGS (70% of sales)	42
Gross Profit	30	Gross Profit	18
Operating Expenses	10	Operating Expenses	10
PBIT	20	PBIT	8
Interest Expense (12%)	0	Interest Expense (12%)	0
PBT	20	PBT	8
Tax Expense (20%)	4	Tax Expense (20%)	1.6
Net Income	16	Net Income	6.4
ROE	16%	ROE	6.4%

A simplified economic model will highlight the point that debt financing can provide better profitability ratios in booms but it is more risky to give profitable results in recession.

Table 2: Financial Statements of Leverage Company

Leveraged Company			
Assets	Rs. (in millions)	L + O.E	Rs. (in millions)
F.A	60	Debt	60
C.A	40	Equity	40
<i>Total Assets</i>	100	<i>Total L + O.E</i>	100

Case 1: Economic Boom Income Statement (Leveraged Company)		Case 2: Economic Recession Income Statement (Leveraged Company)	
	Rs in mln		Rs in mln
Net Sales	100	Net Sales	60
CoGS (70% of sales)	70	CoGS (70% of sales)	42
Gross Profit	30	Gross Profit	18
Operating Expenses	10	Operating Expenses	10
PBIT	20	PBIT	8
Interest Expense (12%)	7.2	Interest Expense (12%)	7.2
PBT	12.8	PBT	0.8
Tax Expense (20%)	2.56	Tax Expense (20%)	0.16
Net Income	10.24	Net Income	0.64
ROE	25.6%	ROE	1.6%

The model shows that in economic booms, leveraged companies are more profitable than non-leveraged companies, but in recessions, leveraged companies are less profitable and hence riskier than non-leveraged companies. Hence, leveraged companies are depending on the assumption that the economic boom will last indefinitely.

Modigliani & Miller (1963) argued that value of a levered firm is greater than the value of an unlevered firm. The difference in value comes from the tax benefit accruing to a levered firm. But, they ignored the bankruptcy costs and the case where even if a company is solvent, the economy may go through a recession.

Furthermore, if this tax benefit is provided to an unlevered firm by making dividends to be tax deductible; then, value of a levered firm may cease to have any extra value greater than an unlevered firm.

When it comes to the use of debt financing in government operations, Zaman (2001) explained by citing *Ricardian Equivalence* that borrowing is not a new and different instrument for financing. It is only a method for pushing taxation forward onto later times. It results in not only irresponsible government, but also results in intergenerational injustice. The authors note that banning of interest based debt will encourage responsible government, by not giving them the option of saddling future governments and unborn generations with debt.

4.3. Nominal or Real Interest: Which is Unjust?

Some economists argue that Islam has emphasized that in case of transactions involving credit, whether in the case of sale or financial debt, it is highly important that the returned article be absolutely identical to the one borrowed; otherwise there is a danger of interest being involved in the exchange. This principle can be applied to index financial loans in the inflationary or deflationary periods when the value of the amount returned undergoes either depreciation or appreciation compared to what it was when borrowed. In other words, the prohibition of Riba applies to real interest, not nominal interest, as with inflation a ban on the latter may result in negative real interest.

This recommendation is a deviation from conventional thought, but following arguments can be raised against it.

If this proposal is suggested at macroeconomic level in financial intermediation like in banking, then it is not practicable in the financial system. Indexing loans with inflation will not yield any return for the intermediary (the bank) in two-tier loan based banking (if indexing based on inflation is allowed in both the sourcing of funds i.e. taking deposits and use of funds i.e. lending).

Inflation is measured by an index which has an urban bias, period bias and representation bias inherently. If indexation is permitted, we will have to index compensation to other factors of production e.g. wages, rent etc. Plus, inflation is just a measure and there are at least four varieties of inflation measure used by Pakistan Bureau of Statistics (Consumer Price Index, Wholesale Price Index, Sensitive Price Index and Producer Price Index). The results also depend on the statistical methodology.

With 'interest' discontinued from the financial system and if all loans are linked with inflation, then more the loans taken, more will be the credit money generation and more will be the rate of inflation.

It will give rise to many serious problems:

- 1) Those who were neither the borrowers nor the lenders will be suffering from inflation.

- 2) In absence of the opportunity to maneuver interest rates for controlling money supply and inflation, the central bank will be incapacitated. Those who were neither the borrowers nor the lenders and are simply earning through wages will demand the same increase in wages. Is this going to be

in anyway beneficial for borrowers who will be paying excess over principal (inflation rate) to the lenders and will also have to increase wages? Will they not want to increase the prices and hence inflation will further increase and hence their cost of borrowing too. Who will benefit from all this eventually? The lender! It is like giving him even more power than before and that too after incapacitating the central bank.

3) Cost-push inflation is driven by supply shocks, such as increase in oil prices, decrease in supply and hence increases in prices of electricity, gas etc. Therefore, deterioration in real purchasing power is caused by factors not in the control of the borrower. He cannot be held liable to compensate in a matter in which he was not responsible.

The opportunity cost argument in this case, if accepted, will result in distributive injustice to the entrepreneur and if the same argument is taken by every person with investable resources, then, there will be no entrepreneur in the economy.

4.4. Pricing Financial Capital in Islamic Finance

Now, we turn to the issue of how to price and compensate capital without using fixed payoffs. First, we mention few proposals by Muslim economists in this regard. In one study, Mirakhor (1996) derived the following formula to calculate the required rate of return for an unlevered firm.

$$\rho = [Y/V](1 - d + dq)$$

Where,

ρ = Required rate of return

Y = Expected value of the firm's accounting earnings in the coming year;

V = Present value of the unlevered firm.

s = Expected stock financing rate as a fraction of the firm's earnings

b = Expected firm's retention rate as a fraction of the firm's earnings

$d = s + b$

q = Tobin's q – market value of capital divided by its replacement cost

In another study, Haque & Mirakhor (1998) proposed a formula to calculate the investment rate of return. They classified government expenditures into i) asset creating and ii) non-asset creating activities. Non-asset creating activities can be financed through tax revenues. But, in asset creating activities, equity modes of financing can be used whereby financing would be generated by way of an instrument. As per their recommendation, this instrument would be priced using the formula:

$$I = w_1WI + w_2PPI + w_3LSI + w_4ROG$$

Where,

WI = World Index

LSI = Stock Index, a measure of market performance index based on ROE.

PPI = Index representing average returns on commercial papers.

ROG = Return on government investments and project.

w_1 , w_2 , w_3 and w_4 are weights assigned to each variable.

However, it must be noted that if the resultant rate is stipulated; then, it would be including opportunity cost. Two mutually exclusive equity financed projects cannot arbitrarily set to have same returns on the basis of opportunity cost.

In practice, Islamic banks simply use interest based benchmarks like London Interbank Offered Rate (LIBOR), Kuala Lumpur Interbank Offered Rate (KLIBOR) etc. The problem is the 'relevance' of these with real economy. A uniform benchmark used for all types of financing transactions for any term whether it is leasing of house, car, consumer appliance, industrial equipment etc or the sale of these assets, is problematic to say the least.

If Islamic banks want to pursue debt based financing, then, it makes sense to use the interest based benchmarks. Next, we discuss an alternate benchmark for Islamic finance industry which can be used in equity based financing contracts to rank investment projects.

Hanif & Shaikh (2010) conducted equivalence of means test between Nominal GDP and Nominal Interest Rate and confirmed that in 12 out of 14 countries where Islamic finance is prevalent, the means of two variables were equal statistically at 1 percent level of significance.

In corporate finance, Nominal GDP growth rate could be used in following valuation models to provide a quantitative mechanism to rank investment alternatives:

1. It will replace 'risk free rate' in Capital Asset Pricing Model (CAPM).
2. Free Cash Flow (FCF) could be calculated using this benchmark rate.
3. It will enable ranking investment projects by Net Present Value (NPV) or Profitability Index (PI) approach.

In project valuation, this benchmark rate could be used to find 'estimated intrinsic value' of cash flows. This would be appropriate due to the following:

- I. We are using an enterprise or output related benchmark rather than interest based benchmark.
- II. The cash flows will be obtained using equity contractual modes like Mudarabah and Musharakah as underlying contracts.
- III. In this case, we are doing valuation for the investor and not for the Mudarib. Mudarib or capital deficient partner will not be obliged to provide the returns based on these valuations. But, the investor can use this "indicative valuation" to rank investment alternatives.

Hence, in corporate finance, the instrument will have a different application. It will provide a quantitative mechanism to rank investment alternatives. In actual distribution of income using equity modes of financing, Profit Sharing Ratio (PSR) would be used and agreed upon at time (t) and applied to the actual gross profit earned in time period (t+1).

Use of Nominal GDP is appropriate as it accounts for current market prices. We pay Zakat on market prices, we sell goods at market prices, and the actual return in money terms of any transaction in real economy also involves the use of current market prices. Plus, the required rate of return will be accounting for current purchasing power of money by incorporating inflation.

In corporate finance, it is not recommendable to use this nominal GDP growth rate as a stipulated return in an underlying loan transaction. The proposal presented here does not provide a benchmark that will become a 'stipulated rate' for all transactions. It will not be an obligatory rate of return to be used in intertemporal exchange of money capital. It is just a tool to be used by individual parties who want to use the equity based financing contract to assess their positions and payoffs and come up with some initial profit sharing ratio for further bargaining.

By using NPV, FCF or CAPM etc or any other models, Nominal GDP growth rate could be used as a discount rate to rank investment projects.

For example, if a project ranked 1 is most preferable for investment, so the Rabb-ul-Maal (investor) could prefer to enter into that contract with a slightly lower PSR. A project ranked 10 is least preferable for investment, so the Rabb-ul-Maal (investor) could prefer to enter into that contract only with

a slightly higher PSR. Ranking would be facilitated by using Nominal GDP as shadow price of capital in financial valuation models.

The two other proposals mentioned at the start of this section can also be used as long as these are not used as 'stipulated' rates in intertemporal exchange of capital in a loan transaction. The merit of these and other proposals will be rested on the criterion that how well they remain close to the actual returns in the particular sectors and overall economy.

5. Concluding Remarks

Interest as a system of allocation of resources ensures a fixed return for one and variable and uncertain for another. In contrast, Islam encourages equity financing in which the loss/profit would be shared. This ensures better results from the perspective of redistribution and better co-operative behavior since payoffs for all parties are linked with productive sector of the economy. Consequently, markets will not have to produce speculative surplus output just to service exorbitant amount of debt and that could stabilize business cycles.

Islam by prohibiting interest eliminates one important source of distributive injustice (Chapra, 1984). But, it does so in a just manner by allowing all people with capital and labor or one of these to contribute in productive enterprise and earn the rewards out of actual return on productive enterprise.

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